

Appin. No. 10/737,078
Docket No. 14XZ126466/GEM-0108

REMARKS / ARGUMENTS

Status of Claims

Claims 1-38 are pending in the application. Claims 2, 10, 14-17, 27-28, 36 and 38 have been amended leaving Claims 1-38 for consideration upon entry of the present amendment and following remarks.

Specification

Applicants amend the specification to correct an inadvertent typographical error in paragraph [0044]. Figure "6" was changed to Figure "5." No new matter has been introduced by this amendment. Reconsideration and entry of the present amendment is respectfully requested.

Claim Objections

Claim 10 is objected to because of the following informalities: it is identical to Claim 9. In response, Applicants herein amend Claim 10 to depend from Claim 5.

Claims 14-17 are objected to because of the following informalities: there is lack of antecedent basis for "the interpolation law". Claims 14-17 are hereinabove amended to depend from Claims 10-13, providing antecedent basis for "the interpolation law."

Claim 36 is objected to because of the following informalities: in line 12, there is a period after "positions". Claim 38 is objected to because of the following informalities: there is no period at the end of the claim. Applicants herein amend Claims 36 and 38 to correct the inadvertent typographical grammatical errors. Applicants further amend Claim 2 to correct an inadvertent typographical spelling error in line 2. "Is" is changed to "are" after "geometrical parameters that."

No new matter has been introduced by these amendments. Reconsideration and withdrawal of the relevant claim objections is respectfully requested.

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Rejections Under 35 U.S.C. §102(b)

Claims 1-13 and 36-38 stand rejected under 35 U.S.C. §102(b) as being anticipated by Zylka et al. (U.S. Patent No. 6,379,043 hereinafter Zylka).

Applicants traverse this rejection for the following reasons.

Applicants respectfully submit that "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, *in a single prior art reference.*" *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (emphasis added). Moreover, "[t]he identical invention must be shown in as complete detail as is contained in the *** claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Furthermore, the single source must disclose all of the claimed elements "arranged as in the claim." *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716, 223 U.S.P.Q. 1264, 1271 (Fed. Cir. 1984). Missing elements may not be supplied by the knowledge of one skilled in the art or the disclosure of another reference. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 780, 227 U.S.P.Q. 773, 777 (Fed. Cir. 1985).

Regarding Claim 1

To support the rejection, the explanation in the Office Action broadly cites Column 2, lines 45+, as disclosing all of the claimed elements of Claim 1. However, Applicants respectfully contend that the Examiner has not met the burden required for a §102 rejection and has not shown with specificity where in the reference the claimed elements as arranged in the claim, are disclosed in Zylka. Applicants consider citation of Column 2, lines 45+ to indicate the Summary of the Invention.

In comparing Zylka as referenced with the instant invention, Applicants find Zylka to disclose providing reference markers on a calibration phantom, the markers measured by the device, calculating the position of position of the calibration phantom, and comparing the calculated position with the actual position of the calibration phantom in the patient X-ray image. (Col. 2, lines 45-65.)

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More particularly, Zylka discloses forming a reference image in which *calibration members 7,8* are reproduced and applied to the arithmetic unit 12, determining positions of the calibration members by the arithmetic unit 12, and calculating reference image properties. (Col. 5, lines 13-23 and Figures 2 and 3.) The arithmetic unit 12 then compares the *stored positions of the calibration members 7,8* in the form of the crossed wires 7 and metal spheres 8 in a circular array, as derived from the reference image (Fig. 4), with the positions of the reproductions of the *calibration members 7,8 in the patient X-ray image* (Fig. 5). (Col. 5, lines 28-33)

In contrast with the instant invention, Applicants do not find Zylka to disclose "an additional position that has not been taken by the device during the acquisition step," as recited and arranged in at least Claim 1. Zylka discloses *only* the calibration markers defined are used to perform any type of calibration or imaging. In fact, Zylka discloses to the contrary of the instant invention by limiting calibration (forming a reference image) and forming of the image (patient x-ray image) to those specific positions (calibration markers) taken.

As Zylka does not disclose any "additional position," it necessarily follows that Zylka does not disclose "determining the projection parameter values associated to this additional position according to the parameters associated to the calibration positions" as at least further recited and arranged in Claim 1.

Accordingly, Zylka is missing elements of the claimed invention and therefore cannot be anticipatory.

Regarding Claims 9-13

As discussed above for Claim 1, Zylka does not disclose at least "an additional position." It necessarily follows then that "the projection parameters associated to the additional position are determined by an interpolation or extrapolation law of the projection parameters associated to the calibration positions," as recited and arranged in Claims 9-13.

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Accordingly, Zylka is missing elements of the claimed invention and therefore cannot be anticipatory.

Regarding Claim 36

To support the rejection, the explanation in the Office Action broadly cites Column 2, lines 45+, as disclosing all of the claimed elements of Claim 36. Column 4, lines 24-31 are also cited, but without any reference to a specific claim. In the absence of any other indication, Applicants assume this citation is directed at Claim 36 because some of the limitations of Claim 36 are stated verbatim. However, Applicants respectfully contend that the Examiner has not met the burden required for a §102 rejection and has not shown with specificity where in the reference the claimed elements as arranged in the claim, are disclosed in Zylka.

As discussed above for Claim 1, Zylka does not disclose at least "an additional position."

Zylka necessarily at least does not disclose, a calibration phase comprising, *inter alia*, "for an additional position that has not been taken by the device during the acquisition step, determining the projection parameter values associated to this additional position according to the parameters associated to the calibration positions" as recited and arranged in Claim 36.

Additionally, an acquisition phase comprising "moving the device with respect to an object to be imaged and carrying out a series of acquisitions, each acquisition being associated to a calibration position or an additional position of the means for emitting radiation, and reconstructing a three-dimensional model of the object from the images acquired and the associated projection parameters, determined during the calibration phase" as recited in Claim 36 is also necessarily not disclosed by Zylka.

Accordingly, Zylka is missing elements of the claimed invention and therefore cannot be anticipatory.

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Regarding Claim 37

To support the rejection, the explanation in the Office Action broadly cites Column 2, lines 45+, as disclosing all of the claimed elements of Claim 37. However, Applicants respectfully contend that the Examiner has not met the burden required for a §102 rejection and has not shown with specificity where in the reference the claimed elements as arranged in the claim, are disclosed in Zylka. Applicants consider citation of Column 2, lines 45+ to indicate the Summary of the Invention.

As discussed above for Claim 1, Zylka does not disclose at least "an additional position."

Zylka necessarily at least does not disclose "means for determining projection parameters associated to each calibration position of the device based on the acquisitions performed; and means for an additional position that has not been taken by the device during the acquisition to determine projection parameters values associated to this additional position according to the parameters associated to the calibration positions" as recited and arranged in Claim 37.

Accordingly, Zylka is missing elements of the claimed invention and therefore cannot be anticipatory.

Regarding Claim 38

To support the rejection, the explanation in the Office Action broadly cites Column 2, lines 45+, as disclosing all of the claimed elements of Claim 37. However, Applicants respectfully contend that the Examiner has not met the burden required for a §102 rejection and has not shown with specificity where in the reference the claimed elements as arranged in the claim, are disclosed in Zylka. Applicants consider citation of Column 2, lines 45+ to indicate the Summary of the Invention.

As discussed above for Claim 1, Zylka does not disclose at least "an additional position."

Zylka necessarily at least does not disclose "means for an additional position that has not been taken by the device during the acquisition to determine projection

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parameters values associated to this additional position according to the parameters associated to the calibration positions; and means for reconstructing the three-dimensional model of the object from the images acquired and the associated projection parameters, determined during the calibration phase'' as recited and arranged in Claim 38.

Accordingly, Zylka is missing elements of the claimed invention and therefore cannot be anticipatory.

Absent anticipatory disclosure in Zylka of each and every element of the claimed invention of at least Claims 1, 9-13 and 36-38, Zylka simply cannot be anticipatory. Claims 1, 9-13 and 36-38 are not further objected or rejected. Applicants respectfully submit that at least Claims 1, 9-13 and 36-38 are allowable. Claims 2-8 are also rejected as being anticipated by Zylka. However, these claims variously depend from allowable Claim 1 and are thus correspondingly allowable.

In view of the foregoing remarks, Applicants respectfully submit that the Examiner's rejection under 35 U.S.C. §102(b) has been traversed, and requests that the Examiner reconsider and withdraw of this rejection.

Rejections Under 35 U.S.C. §103(a)

Claims 14-35 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Zylka as applied to Claim 1 above.

Applicants traverse these rejections for the following reasons.

Applicants respectfully submit that the obviousness rejection based on the References is improper as the References fail to disclose or suggest each and every element of the instant invention. For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). The Examiner must meet the burden of establishing that all elements of the invention are disclosed or suggested in the prior art. MPEP §2143.03.

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Furthermore, Applicants respectfully submit that if an independent claim is non-obvious, then any claim depending therefrom is non-obvious. MPEP §2143.03 referencing *In re Fine*, 5 USPQ2d 1596 (Fed. Cir. 1988).

Claims 14-35 depend variously from Claim 1. Claim 1 has not been rejected on obviousness grounds.

Regarding Claims 19-26

As discussed above for Claim 1, Zylka does not disclose at least "an additional position."

Zylka necessarily does not at least disclose "the projection parameters associated to the additional position are determined by a combination of the projection parameters associated to the calibration positions of the device closest to the additional position, the number of positions taken into account being less than five" as recited and arranged in Claims 19-26.

Accordingly, Zylka is missing elements of the claimed invention and therefore cannot be anticipatory.

Regarding Claims 27-28

Zylka does not disclose "during the step where the projection parameters associated to each device calibration position are determined, some of the projection parameters are defined by a law dependent on other geometrical projection parameters" as recited and arranged in amended Claims 27-28.

Accordingly, Zylka is missing elements of the claimed invention and therefore cannot be anticipatory.

In view of the foregoing remarks, in combination with the discussions earlier regarding the rejections under 35 U.S.C. §102(b), Applicants respectfully request reconsideration and withdrawal of all rejections under 35 U.S.C. §103(a), which Applicants consider to be traversed.

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In light of the forgoing, Applicants respectfully submit that the Examiner's rejections under 35 U.S.C. §102(b) and 35 U.S.C. §103(a), have been traversed, and respectfully requests that the Examiner reconsider and withdraw these rejections.

The Commissioner is hereby authorized to charge any additional fees that may be required for this amendment, or credit any overpayment, to Deposit Account No. 07-0845.

In the event that an extension of time is required, or may be required in addition to that requested in a petition for extension of time, the Commissioner is requested to grant a petition for that extension of time that is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to the above identified Deposit Account.

Respectfully submitted,

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